Tempe Fire Department Policies and Procedures
Water Distribution System
603.01
Rev 8-2-95

The following information was supplied by the Water Management Division for the City of Tempe. A better understanding of our water system should be realized with this information.

WATER PRODUCTION FACILITIES

Papago Water Treatment Plant	50.0 million gallons per day
South Tempe Water Treatment Plant	40.0 million gallons per day
Tempe Well System	16.1 million gallons per day
City of Phoenix Connections (At First Street and Hayden there is a booster station with two five million gallon per day pumps.)	8.5 million gallons per day
Total Production Capability	114.6 million gallons per day

SURFACE WATER PLANTS

The Papago and South Tempe Water Plants treat surface water. Surface water is water from the Salt and Verde River systems. The water is delivered through the canal system to our plants. We remove all of the suspended matter through chemical coagulation and mechanical flocculation and sedimentation. We filter and chlorinate the water, then store and pump that water into the distribution system as the demand dictates.

WATER STORAGE FACILITIES

Kyrene Reclamation Plant	12.0 million gallons
Papago Water Treatment Plant	11.7 million gallons
South Tempe Plant	23.0 million gallons
Bell Butte	2.0 million gallons
Hayden Butte	3.0 million gallons
Papago	1.0 million gallons
Total Storage	52.7 million gallons

WELLS

Wells in the system are presently operated by manual or remote control and are directly connected to the distribution system. These wells are drilled to various depths and range from 234 feet to 1054 feet.

In case of a major power failure, one well is equipped with a natural gas-powered engine. This well would produce approximately 1.7 million gallons of water a day. In addition to this well, we would have water in the storage tanks which would supplement the system.

SYSTEM PRESSURES

System pressures range from a low of 55 psi to a high of 100 psi. We have two areas within the City which required special booster pumps to provide water service, one area is north of McKellips Road and east of College Avenue, the second area is south of Baseline Road to Warner and from 56th Street east to Hardy Drive.

FIRE FLOW REQUIREMENTS

The average required fire flow within the City varies from a low of 1000 GPM in residential areas to a high of 5000 GPM at some commercial and educational complexes. These flows were established by the Insurance Services Office, in April of 1982. With our present system, the City of Tempe is able to meet those needs in all areas of the City.

FIRE PROTECTION

Our production, pumping, and storage facilities are capable of meeting major fire demands. Normally there is no need to notify the Water Department of a fire. If circumstances require notification, contact may be made through the Water Plants or through the supervisor in charge.

HYDRANTS

We have over 8,000 hydrants in the City of Tempe at this time. The hydrants are equipped with two 2-1/2" outlets and one 4" connection. These hydrants have a special Tempe thread.

DAILY WATER USE

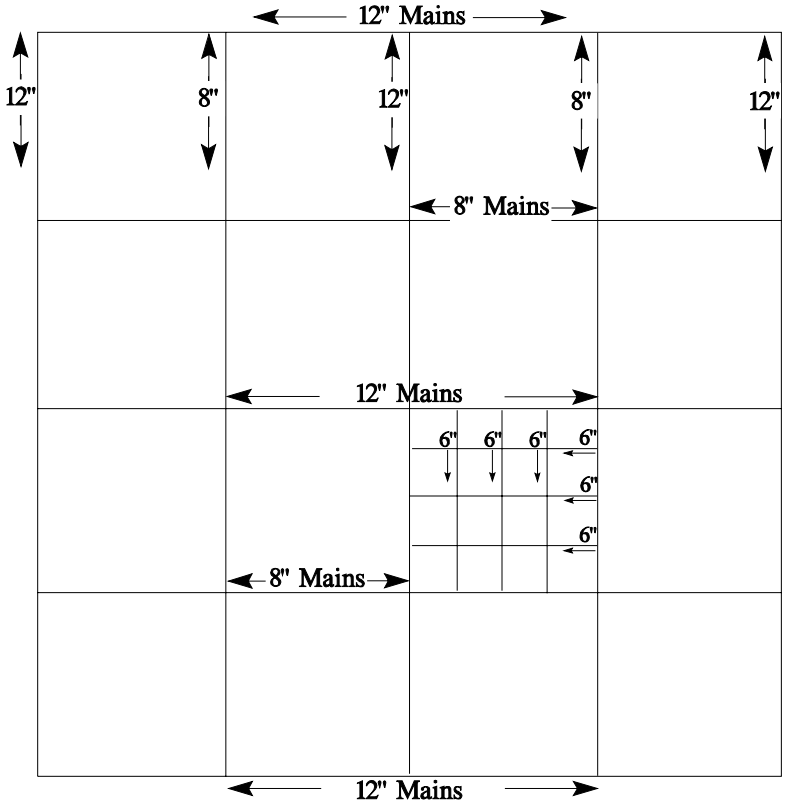
Daily water use is over 35 million gallons. Demand on the system is greatest between 0600 and 1000 hours and again between 1600 and 2200 hours throughout the year.

PRIVATE HYDRANTS

Certain areas in Tempe have private hydrants (Safeway Warehouse, Concord Village, Motorola, etc.) These hydrants are maintained under the scrutiny of the City of Tempe. For purposes of fire control, they are to be treated as any public hydrant.

GRID SYSTEM

This is a typical cross section of the type of grid system used in the City of Tempe. The section below would be equivalent to one of our districts. In other words, it covers approximately one square mile. The only time the Water Department will use a 4" domestic line would be in the event three or less houses were built in a cul de sac. In all other situations, they would install a least six-inch mains to insure an adequate water supply. Hydrants are typically supplied by six-inch supply mains that are looped (2 separate sources). No "dead-end" hydrants are allowed over 150 feet from their supply source, and must be supplied by an 8-inch minimum supply main.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